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Volume XIX | SATURDAY, JUNE 21, 1924 | Number 495

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THE SCIENCE PRESS

LANCASTER, PA. GARRISON, N. Y.

GRAND CENTRAL TERMINAL, NEW YORK CITY

Entered as second-class matter August 15, 1923, at the Post Office at Lancaster, Pa., under the Act of March 3, 1879.

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SCHOOL AND SOCIETY

Volume XIX | Saturday, June 21, 1924 | Number 495

COLLEGE PREPARATION FOR THE STUDY OF MEDICINE[1]

Consideration of the subject announced for this discussion, "Coordination of liberal arts college and degree with curriculum and degrees of professional and technical schools as developed during the last ten years," has led me to think that a representative of medical schools can serve the general purpose best by dividing his discussion into two parts, considering, first, coordination of *work* in college and professional schools, with a comparison of the results attained in 1914 and 1923; second, coordination of *degrees*.

I. Coordination of Work

If the coordination of work of the colleges and medical schools has been developed along sound lines during the last ten years, it will necessarily have produced one very definite result. Students entering on the study of medical science now will be better than their predecessors of ten years ago. The words "students will be better" have been used deliberately instead of "students will be better prepared," because the business of the college is to produce a good man rather than to attach some good things to a man. Are they better? This is the crucial question; and if we can make a true comparison between these groups, we shall know whether the development of our college work in its relation to medicine is proceeding in the right direction or not. It is apparent that this question can not be answered without a clear definition of what constitutes a good medical student.

[1] Address delivered before the North Central Association of Colleges and Secondary Schools, March 22, 1924.

What Constitutes a Good Student of Medical Science

To be capable of success in the study of the medical sciences a student must be equipped with four things, all of which he must get in the colleges. These in order of increasing importance are: (1) knowledge, (2) intellectual curiosity, (3) intellectual power, (4) character.

Knowledge

His *general* knowledge enables a student to orient himself in the world. This is what leads him to elect medical science as his life work. He must have *special* knowledge also of physics, chemistry and biology, for the science of medicine is built up largely on them. Physiologist and anatomist must speak in terms of physics, chemistry and biology, and the student must know the terms. These are essential, but the scope of medical science and practice is so broad that there is no department of college work which can not contribute something of value; the psychiatrist can use psychology and sociology; the specialist in public health must needs be an exponent of economic values; the sanitarian requires geology, all need English, etc.

Intellectual Curiosity or the Desire to Understand

At best only a limited amount of knowledge can be acquired in college. The college owes each of its students a greater good, namely, the spirit and method of science. The foundation of this is the desire to understand. Knowledge without understanding is relatively useless. It is pedantic and fleeting, for we forget unless we understand. The shape and other properties of an atom explain its reac-

tions, which can then be remembered. By comparing, differentiating and classifying facts, the student sees the underlying uniformities or laws, and the beauty of their harmonious cooperation: he sees how one fact can never be in conflict with another fact, because all the natural laws together have cooperated to produce the human body and all else that is in the world. And they appear in the working of every thing which they have made. Thus, alluring vistas of understanding open before him and he follows science for love of it. Such a student will have developed the inquiring mind. He will have seen for himself the answers to some of his questions, he will have been told the answers to others, and will have seen that the answers are true. More questions will constantly arise in his mind, and he will know that the things before him each day are telling him the answers if he can but see them truly and hear what they say. He will want constantly to put questions to nature. All experience will be to him a means of growth. This mental attitude is better than knowledge as a qualification for the study of any science.

Intellectual Power

This includes power to see things as they are, power to make sound judgments, power to see through things to the underlying laws which they express. There are many elements in power; knowledge and understanding are two, but it goes much further than these. There must be added through work accuracy of observation, thoroughness, honesty, critical ability, the caution that comes from experience and the boldness that comes with conviction. Intellectual power enables a physician to grow as science grows and to take advantage in his patient's behalf of all advances in science or art as soon as they are made. To such the future belongs.

This intellectual power must be acquired in college. A man is not born with it, though he may inherit the possibility of it; but it must be developed. A student can not dream accuracy, honesty, thoroughness, caution.[2] They come only through work, and in college he is made or marred. Each day's work does two things: It accomplishes the daily task and it puts into a man these qualities to be there always and appear in all his later work, or it snuffs them out. Slovenly, inaccurate, dishonest work in college builds slovenliness, inaccuracy, dishonesty into the man to be there forever. By the time he is through college the plastic years are gone. What he is, he will remain.

The value of accuracy of observation is universally admitted, but the great rôle it plays in medicine is not always appreciated. A physician sees a patient and being unable to make a diagnosis calls in another. The other makes a diagnosis which subsequent events prove to be correct. The evidence is the same for both. One sees what is there, the other does not, or if he does he can not see what it means. He can not make sound judgments. This is what makes the difference between success and failure. It is a matter of intellectual power. Knowledge has relatively little to do with it.

Character

The fourth requirement might be called sense of obligation—obligation to be of service, obligation to truth, obligation to develop one's own powers to the utmost. All other things, if attained, are useless and may be worse than useless without these. Knowledge, understanding, intellectual power—all the things so far mentioned, the physician *owes* his patient. But if, in addition, the patient's interest is not his first consideration, he has no right to be a physician and we have no right to

[2] See Henry Drummond, "The Ideal Life," page 139.

admit him to the medical school. The Hippocratic oath binds the physician to his patient's service in an obligation almost religious. This, combined with his obligation to truth and to science, constitutes a real "Religio Medici." The physiologist who publishes a statement not sufficiently verified and controlled feels that he has *sinned* against truth; he repents in dust and ashes and is abhorred of his fellows, for he has defiled the temple. The same is true of any medical scientist whose conduct shows that he does not feel these obligations. That this is a simple statement of fact, and not imagining, will be evident to all who know the feeling of physicians who may not seem religious towards one of their number who puts his own interest, financial or otherwise, ahead of his patient's good.

The latter three qualities are much more necessary than knowledge. Without them mastery of medical science is impossible. A defect in knowledge will be readily and certainly made up by a capable student with intellectual power; but defects in understanding, power or character can not be readily made up. Such defects entail certain inefficiency and almost certain failure both in the study and practice of medicine.

COMPARISON: 1914 AND 1923

Having thus a clear idea of the qualities essential for the successful prosecution of work in the medical courses we can proceed to the comparison of medical students of 1923 with those of 1914 in respect to these four things, and so come at an intelligent estimate as to whether or not we are progressing in the desired direction. First, knowledge: In this there has undoubtedly been great improvement. Twenty years ago only a few had the essential foundation for medical work. Now nearly all have it. Even in ten years the improvement has been very evident. Two indications of it may be mentioned. In 1914 there were 142 failures or conditions in preclinical work at the University of Chicago. The corresponding number for 1923 is only 35; in the entire United States 10.2 per cent. of the graduates of 1914 taking state board examinations for license failed, but of the graduates of 1923, only 3.1 per cent. failed. These figures do not prove indisputably that our colleges and medical schools have equipped our students with greater knowledge, but they are fairly good evidence of it, because the examinations both of schools and state boards have been unfortunately mainly tests of knowledge.

Second, intellectual curiosity: There is reason to believe that intellectual curiosity is being developed to a greater extent in our colleges now than ten years ago. Several facts indicate it rather clearly. An increasing percentage of medical students have been led by this quality as far as the bachelor's degree. In 1914, 22.5 per cent. of the medical students in the United States had attained it. In 1923, 57.3 per cent. had gone that far.[3] The number of elective courses taken in the first two years of medical work in addition to those required is also a fair index of intellectual curiosity. In 1914, 72 per cent. of students in the medical courses of the University of Chicago took extra electives. In 1923, 73 per cent. registered in them. There has always been a small number whose desire to understand the preclinical sciences has led them to step aside from the regular sequence of medical work and study these sciences until they attained one of the higher degrees. In the University of Chicago this number has materially increased during the last ten years. Eleven students were given degrees of Masters of Science or Doctor of Philosophy in anatomy, physiology, bacteriology or pathology

[3] Statistics of the Council on Medical Education and Hospitals of the American Medical Association. N. P. Cowell, M.D., Secretary.

in 1914. The corresponding number for 1923 is 32. The degree of Doctor of Philosophy was given to 4 and 17 students, respectively. During this period the total registration has remained practically the same.

Third, intellectual power: The possession of intellectual power is more difficult to estimate. Unfortunately, our ordinary examinations test it ineffectively or not at all. The examinations for higher degrees are the only ones that test it definitely. The conduct of original investigations such as is required for these degrees is incomparably the most effective means for the development and growth of intellectual power, and before the work is completed and the degree awarded the professor in charge of it is quite certain to know whether the candidate possesses it or not. Even then the degree of it is difficult to estimate. Only the work of after years can demonstrate that clearly. But it is encouraging that the number of students going into this work has been increasing.

For other students perhaps the best index is the opinion of capable and conscientious instructors who seek for this quality and encourage it, realizing that upon it the progress of science depends. I have inquired of four of my colleagues whom I thought most likely to form sound judgments on this point. Three are of the opinion that the ordinary student does not possess any more of this most valuable quality than did his predecessor of ten years ago. The fourth thinks there may be a little more of it.

Fourth, character: The opinion of observant instructors seems to be the best criterion for estimating this quality. My colleagues state that in general our students are not better in this respect than their predecessors.

To recapitulate: Such comparison as I have been able to make shows great improvement in the last ten years in the general and special knowledge which students bring to professional schools, and in the degree of intellectual curiosity they display. This has undoubtedly been due in large measure to their college training. There is still need for improvement in the development of intellectual power and character.

This condition immediately suggests the question: Have our efforts to increase the amount of information possessed by our students interfered with the growth of valuable and essential qualities which we should help them to develop? There is reason to believe that this is true. The curriculum both of our colleges and medical schools has been so filled with required courses of great content that students have not had time or spirit left to develop understanding, intellectual power and character. The dean of one of our medical schools (Cornell) has remarked, "Our students resemble domestic fowls fattened for the market expecting their food to be served to them in trays. We should prefer game birds."[4]

This defect is not one that can be corrected by fixing the curriculum, though it may be necessary to relieve some of the time and spirit of the student from grinding tasks. Even so, the desired qualities can hardly be developed if the instructor is merely a taskmaster, and if they do grow it will be in spite of him. Under a teacher who is not a taskmaster but a "kindler of souls" these qualities will bud and flourish, and heavy tasks will be lightened by enthusiasm. The effect of contact with such a teacher is described by one who possessed these qualities in the highest degree, Louis Pasteur, and I can not refrain from quoting his tribute.

> There is in the youth of each man of science and undoubtedly also in that of each man of letters, one day, which he can never forget, when, with full spirit and with full heart he has known the noblest emotions, when he has felt himself live in such an intermingling of pride and gratitude that

[4] E. F. DuBois, "On certain courses not listed in the medical curriculum," *Science*, Vol. LIX, No. 1516, January 18, 1924.

every day of his life thereafter is brightened by it. That day is the day when he becomes a pupil of the masters to whom he owes his first enthusiasms, and whose names have never ceased to appear to him in a halo of glory: to see at last these kindlers of souls, to hear them, to speak to them, to avow to them, close up—at their sides, that secret religion, so long cherished in the silence of his obscure youth, to acknowledge himself their disciple and to feel not unworthy of being it! Ah! What other moment, whatever may be our career, can compare with that? What other can give emotions as deep?[5]

The ideal solution would be to have teachers like those whom Pasteur loved, and students like Pasteur. Perhaps we can not reach that ideal, but we can move toward it. Efforts are being made to encourage the growth of these qualities. In the colleges of arts, literature and science of the University of Chicago instructors have been asked to report, in addition to the regular class reports, the names of students who show these qualities actually or potentially. In Cornell University Medical College the faculty has realized that the curriculum is overcrowded and has reduced the number of hours of instruction by 20 per cent. In Harvard Medical School two afternoons are being set free each week.

If our colleges can succeed in developing the intellectual power and high qualities of character which some of our students possess, they will give the community a great service, for they will provide the leaders on whom the advance of science depends. In the past these potential leaders have been sacrificed in our democratic institutions to the needs of the average man. President Roosevelt in his address to the University of California in 1911 has stated clearly what is still perhaps the most important advance we can make in the service which we give our country:

> We have a right to expect that, here in America . . . our higher institutions of learning shall also with seriousness and earnestness devote a good portion of their energies to the cultural training which shall give us the opportunity in our turn as a nation to develop the exceptional man, the exceptional masters in the highest fields of abstract intellectual achievement, in the field of literature, in the field of art and in the field of abstract science.[6]

[5] Translated from Appendix, E. Duclaux, Pasteur, "The History of a Mind," Saunders, 1920, p. 344.

II. Coordination of Degrees

The discussion of the coordination of the college degree with the work of the professional school seems to center round one question: To what extent should the college give credit for its bachelor's degree for work done in professional schools?

This is an old question, but it seems to me that one or two very definite principles should determine the answer.

As was clearly indicated by Mr. Roosevelt in the statement quoted above, the community looks to our colleges for culture "in the field of literature, in the field of art and in the field of abstract science." Indeed, there is no other place to which the community can look for it, and this indicates the greatest service and the prime duty which the colleges owe the country. This culture must always involve the care and development of the four things above mentioned as essential in a good student.

The part of the community which looks most confidently to the colleges for devotion to literature, art and abstract science and for the development of these qualities appears to me to be the professional schools. The medical schools have found such training essential before the study of medical science can be successfully undertaken and during the last ten years all have asked for one and then two years of it. Some have asked for three or even four years. The reason for this appears in the statement of one of them: "It is believed that the student pursuing these studies in the atmosphere of an institution devoted to scientific

[6] T. Roosevelt, University of California *Chronicle*, Vol. XIII, No. 2, April, 1911.

work can not but gain a broader and more thorough conception of these sciences.''[7]

It seems clear that the community in general and the professional schools in particular look to the college as the one place where arts, literature and science are cultivated for their own sakes in a scholarly atmosphere, and I believe they appreciate the colleges in proportion to their faithfulness to the trust imposed in them.

They should, therefore, give credit toward their degree only for work of college character, devoted to college ideals and carried on in a college atmosphere. Whatever work is of this type is worthy of recognition. No other should be recognized. Undoubtedly some professional schools do work of this character.

Before work in any professional school is recognized as of college type, these questions should be answered affirmatively:

(1) Is the professional school an integral part of a university?

(2) Is it in close association with the other parts of the university?

(3) Is its work recognized by the college of arts, literature and science of its own university, and credited toward its bachelor's degree?

(4) Is there convincing evidence that its work in the past has been of college quality, encouraging the development of intellectual curiosity, intellectual power and sound character, and leading to the advance of science?

If these questions can be unhesitatingly answered in the affirmative, college credit can justly be granted, limited in amount to that permitted in one subject or in one sequence. If these questions can not all be answered in the affirmative, the college granting credit towards its degree for such work seems to fail in its duty and to be unworthy of the confidence of the community. A student seeking credit for such work might be admitted tentatively into the college, and after several quarters' work has permitted an evaluation of his achievement, each college department in which he has done sufficient work might recommend the amount of credit toward the bachelor's degree, if any, which could justly be given him.

But, after all, from the standpoint of the selection of students for admission to the medical courses, degrees are of only secondary importance. A degree is at best a seal set upon achievement. What counts most is not even the achievement. It is the vitality of the qualities above outlined. We can say of degrees what Burns said of social rank:

> The rank is but the guinea's stamp.
> The man's the gold.

B. C. H. Harvey
University of Chicago

[7] Rush Medical College, 1917, J. M. Dodson, Dean.

A JUNIOR HIGH SCHOOL ART PROGRAM

During the past school year some of the motivation topics which have been found especially useful by junior high school art teachers in the state of New York include painting, sculpture, architecture, industry and commerce. The necessary technical information relating to artistic expression has been organized under the topics: color, freehand representation of form, mechanical representation of form, design, lettering and appreciation. A junior high school[1] program in art embodying this motivation and technical information gives promise of fuller returns than have been realized in the past.

Nature has been accepted as the most important source of inspiration because it is recognized that nature is the source of all life. Consequently, the dependence of art

[1] Courses in art are offered in grades seven and eight of practically all schools and in grade nine of most schools, whether an actual junior high school program is in operation or not.

on nature for all material things and even for the governing principles of design is complete. Nature is the guide to craftsmanship and dictates fitness to purpose; it suggests design motifs, color and pattern in its sun, moon, stars, mountains and valleys and in its oceans, lakes, trees, flowers, foliage, insects, birds and animals and people. Nature was the source of most historic ornament, and the highest interpretation and expression of ideas and ideals derived from nature have produced the best art of most peoples and periods in history.

In any adequate program for art education a broad educational background in all instances reinforces and justifies the instruction in design, color, representation, lettering and working drawings in the junior high school. Instruction should aim especially to establish in pupils desirable attitudes toward their work and toward life, correct standards of appreciation and sound bases for choice.

In such a program systematic instruction in drawing is fundamental in all types of art education since drawing not only constitutes a graphic language in most of the trades and industries, but especially since experience in drawing, both freehand and mechanical, leads also to correct methods of planning and to effective choosing of the material things of life. Drawing, if properly taught, should help one to appreciate the world's masterpieces of art and of industry.

To discuss adequately the part that drawing plays in the junior high school program would involve an extensive consideration of the subjects of art, industrial arts and household arts. Let us begin by suggesting a junior high school organization in which separate provision is made for systematic instruction in drawing, involving the principles of design and color, the freehand and mechanical representation of form and lettering. Such instruction is doubly valuable if it is intimately related to the experiences of life outside of school. Consequently, it will be seen that throughout the junior high school period instruction in art may well be motivated quite largely by industrial and commercial interests, although such other important motives as architecture, sculpture and painting should be included.

Appreciation is the chief objective sought in all this work, an objective so intangible and illusive that attempts to attain it will generally prove futile unless the teacher is possessed of an unusual amount of common sense and a thoroughly reliable method of procedure; for appreciation will not come of mutual admiration on the teacher's and the pupil's part. It must come as the result of experience. This experience must needs be provided. To appreciate fully, the pupil must be given an *apperceptive base* derived from actual contact with materials, plus the related information required to make all activity engaged in significant from the intellectual side.

To adequately appreciate an art the pupil should become acquainted with its source and evolution, and with its masters, past and present; and he should also come to know of its significance in our present civilization. He should be taught to analyze its products by means of the senses, and he should be taught thus to differentiate between good and bad materials and products, distinguishing between the poorer and the finer grades and qualities and making correct choices. He should be informed on the processes involved and the tools and machines used in making them adaptable to their use. Ultimately, he should be able not only to apply this knowledge in the selection of products but also in their combination or arrangement. Adequate vocational and educational guidance will result from such a method, while the cultural and liberalizing elements will also be amply provided.

The motivation topic once chosen, de-

sign, representation and lettering should each be made to contribute its store of practice for the sake of clarifying and emphasizing ideas and art principles as they arise. Formal instruction should be eliminated, except where it is absolutely required to develop new skills needed in creative expression; for self-expression on the pupils' part should be the teacher's ever-present aim.

In such a plan for art education a working knowledge of design is most essential. The pupil will need to know the meaning of rhythm and balance and of the resulting harmony, because he can not express himself artistically without applying the principles of rhythm and balance in his work. He will need to know the difference between the pictorial and the decorative as expressed in line, mass and color. Structural design will be justified for him in natural forms, and good construction must be the inevitable result. The play impulse will find tangible expression in the enrichment of contours and surfaces, and historic ornament will be rightly regarded as suggesting ways of working rather than as a source of motifs. To all this, color will be made to contribute its fund of hue, value and chroma.

In representation, the illustrative will need to be combined with the decorative and perspective drawing made to contribute valuable practice in the disposition of line and mass and of light, shade, shadow and reflection. The perspective of space will also be involved in the artistic representation of beautiful natural and manufactured forms and in interior and exterior views. Technical rendering in pencil, charcoal, crayon, pen and ink, water and oil paints will have an important part to play. Many problems requiring careful lettering in capitals and lower case, both in Roman and Gothic forms, will be included. Working drawings will often need to be made which will require accurate and artistic rendering. In this connection, need will be felt for a fundamental knowledge of the principles underlying drafting—the alphabet of lines, dimensioning, the theory of orthographic projection and the preference of the third angle. In all of which specialization must be carefully avoided, for the work of the junior high school period must be kept general. Although mechanical drawing is included in the general course as a phase of the art content, most junior high schools should be encouraged to offer in addition courses in drafting as such, but related, as far as practicable, with the various shop and homemaking courses.

It was pointed out at the beginning of this paper that the motivation topic for the general art course in junior high school is most often chosen from the fields of painting, sculpture, architecture, industry and commerce. Each of these fields will be discussed briefly in the paragraphs that follow.

Linear drawing is the most elementary form or representation. Next in difficulty comes representation in black and white and in values of gray. *Painting* consists in representation by means of pigments, generally applied with a brush. The materials and methods of painting have varied with peoples and periods. A historical survey of the field of painting includes a consideration of the following nationalities or schools, considered preferably in the order in which the names are given: Egyptian, Chaldeo-Assyrian, Greek, Etruscan and Roman, Italian, French, Spanish, Flemish, Dutch, German, British and American.[2] The past should be studied with a view to making clear present art in painting, particularly to the art of America.

Sculpture is the art of modeling, carving

[2] For an enlargement of this outline see Van Dyke, J. C., "A Text-book of the History of Painting," Longmans, Green and Company.

or casting material artistically into statues or decorative ornaments. A historic survey of the art of sculpture includes the following: Egyptian, Babylonian, Assyrian, Persian, Hittite, Phoenician and Cypriote, Greek, Italic and Etruscan, Roman, Early Christian and Byzantine, Medieval (in Italy, France and Germany), Renaissance (in Italy, France and Germany), Modern (in Italy, Denmark, Sweden, Germany, Russia, France, England and America).[3] The past is studied for the sake of the values that the historic schools have contributed to modern sculpture. Attention should be directed especially to the results of these historic influences on the sculpture of America.

Architecture has to do with the planning and construction of buildings. The manner of building, throughout the ages, has been characterized by certain styles of construction and ornamentation. Chief among these styles are the Egyptian—majesty, solidity, colossal size; Greek—simplicity, symmetry, monumental repose, column and lintel construction in dressed marble; Roman—civic building, utility and imposing appearance, arched construction, combining the Greek orders; Early Christian—in the east, large domed interiors for public worship and in the west, adaptation of the Roman basilica; Saracenic—first use of the pointed arch, elaborate decoration in color; Romanesque—massive, development of stone vaults, round arched openings, small windows, somber dignity; Gothic—strains brought upon isolated points and balanced, walls less important than windows, ribbed vaulting, pointed arches, vertical lines, vastness, complexity, mystery; Renaissance—revival and adaptation of classic Roman types.[4] Fitness to purpose is a governing principle of all good architecture. At the present time steel construction and reinforced concrete construction are important. In America civic and domestic architecture are worthy of careful study and analysis. The subject of architecture is here interpreted to include interior decoration.

Industry implies purposeful human effort. It includes the transformation of natural materials into finished products, either by tool or by machine. Some of the industries in which the element of art has been and still is most significant are ceramics, including pottery which embraces dinner and hotel ware, terra cotta and brick and tile; costumes, including dresses, suits and cloaks, waists, negligées and children's dresses; furniture, including the special forms for various purposes and environments; lighting fixtures for streets, public buildings and homes; machinery and tools; printing, including books, magazines and newspapers; textiles, including woven and printed patterns, dyeing and batik and wall paper. The evolution of the art industries should be studied, especially as they have been developed in America.

Commerce is concerned with trade and especially with the buying and marketing of commodities. Commercial art comprises the designing of various advertising forms for newspapers, magazines, bill boards, circulars, leaflets, announcements, car cards and other posters. Commercial art includes, therefore, the planning of advertising publications or the arrangement of typed material and illustrations on the page, the arrangement of the pages with reference to one another and the choice of paper stock and inks as well as the designing of trademarks and letter heads,

[3] Marquand, Allan and Frothingham, A. L., "A Text-book of the History of Sculpture," Longmans, Green and Company.

[4] Résumé of the material on architecture contained in the dictionary. For a more extended outline refer to the word *architecture* and to the chart and illustration, pages 118 and 119, Webster's International Dictionary, Reference History Edition, 1910.

commercial illustration, artistic sign painting and scene painting.

Art courses in the senior high school are planned to meet the distinct and differentiated needs of the pupils who possess marked inclination toward art, and who have been selected from the try-out general courses of the junior high school years. These pupils will generally be found to possess considerable talent, and they can consequently be trained in technic. At this time "it is the aim of the art department to provide means for capturing these talented pupils and for placing them in classes where they may be especially trained."[5]

Senior high schools should offer courses in design planned to meet special needs, courses in commercial design, craft design, textile design and costume design. There should sometimes be courses in color as such, but more frequently we should find courses in home planning, interior decoration and illustration (including costume illustration) involving concrete instruction in the use of color as a means to an end. The advertising field will suggest a number of units planned to meet the peculiar needs of pupils who expect to enter the commercial art field. Chief among the large number of courses in advertising art should be mentioned those in pen and ink rendering for newspaper work, in wash drawing for circulars and in poster and commercial lettering. The architectural field suggests special courses in the drawing of plans and elevations and in detail rendering and specifications. A number of courses in the appreciation and history of art should also be offered. The senior high school should further make available, at least in the large centers of population, some special advanced courses in anatomy and drawing from the figure planned primarily for the most promising pupils, who can profit by the instruction given.

[5] James P. Haney.

LEON L. WINSLOW
STATE SUPERVISOR OF ART,
NEW YORK DEPARTMENT
OF EDUCATION

A SENIOR HIGH SCHOOL COURSE IN CITIZENSHIP FOR YOUNG AMERICANS[1]

THIS course is equally recommended for young foreigners who are to become American citizens; it is, however, designed primarily for Americanizing native-born Americans.

The purpose of the school is to develop a citizen who not only possesses the qualities of personal character approved by the moral judgment of enlightened men, but who is also conscious of the duties of social institutions and who is ready to bear his full share of responsibility in the conduct of these institutions.

If anything is wrong with his family, his local community, his state or his nation, the fault is also his, unless he is doing his utmost to correct the wrong, and, to the extent of his ability, intelligently contributing towards realization of the ideal functions of these institutions.

The development of his own personality and his furtherance of institutional development are two aspects of a unitary process. Social progress, of necessity, includes development of personalities; while personalities develop through their contributions to social progress. All the really great characters of history became great through social service.

The course here suggested is designed to be the culmination, through the curriculum, of secondary school endeavor towards the development of character and good citizenship.

Effort is being made at this time to determine anew the character education objectives for each division of public education and to suggest methods of realizing these objectives through the course of study, extra class room activities, and all other means available to the school.

[1] Read before the section meeting on "Training in character and for citizenship" of the Superintendence Department of the National Education Association, February, 1924.

Thus, ten or eleven years of school instruction and training for character will precede this effort in senior high school to round out the process through formulation of ethical principles and through practice in application of these ethical principles to complex social situations. The youth, on entering the course, will have acquired substantial knowledge of the most fundamental aspects of the social inheritance. He should know at least the basic laws of science, both physical and biological; something of human nature and especially of the social nature of man; he should be familiar with the history of civilization, including man's most recent achievements—social and moral as well as material. Thus the ideal of progress should be well established in his mind.

The senior high school course in citizenship is founded upon this ideal and recapitulates the knowledge upon which it is based. It aims to bring out very clearly the nature of the social inheritance and its great significance in human progress, both social and individual. It leads the pupil to appreciate his dependence upon humanity as a whole and therefore to sense his obligation to humanity. This conception of the solidarity of the human race, of its achievements and future possibilities, may become to youth a most inspiring ideal, a great impelling force to social service. It lifts youth above the narrow individualism of the eighteenth and early nineteenth centuries, it gives him vision beyond any selfish or partisan interest; it provides a point of view from which he may grasp the laws of social progress and identify himself with the great life of humanity. Thus social duties become moral opportunities; social service, a coveted privilege; wealth, knowledge, vocational efficiency, physical and intellectual power, all become means of returning to humanity something of permanent value in discharge of the debt each individual owes to his fellows. This conception of justice and moral obligation is the foundation of the course in citizenship and the guiding principle in the solution of social problems.

The problems selected for study are chosen because of their significance in our own times. So far as classification is concerned they are drawn indiscriminately from the fields of civics, economics and sociology. While these subjects deal primarily with what is, the course in citizenship, or social ethics, passes from what is to what ought to be; it seeks to discover the underlying principles by which what is may be approved and perpetuated or disapproved and modified to conform to acceptable standards. Thus, the seeming incoherence of topics is overcome through application of common ethical principles to all problems; its purpose throughout is to point the way to further social progress and to the highest development of personalities through social service.

Preservation of the good in the social inheritance is necessary to progress, but to rest on this means stagnation. Any such stagnation in the material world is forestalled by the very rapid development of applied science, the keen competition in modern business and the ambitions of men for wealth and power. It is the primary business of teachers to catch and maintain the vision of social and moral progress, to build in the minds of youth moral values and practical ideals—not commercial values as such nor impractical dreams.

Citizens have constantly before them political and other social problems that can be solved only by application of fundamental ethical principles. Knowledge of facts involved is, of course, necessary; but knowledge of facts without guiding principles and feelings of obligation to promote human welfare may avail nothing. Such knowledge when used towards realizing selfish ends may even become socially detrimental.

The following are some of the problems discussed in the course in citizenship, after the introductory lessons reviewing the social inheritance and its ethical significance:

The conservation of human life:
  The right and the duty of the state to legislate towards this end; *e.g.*, laws relating to labor, health and public morals.

Looking toward the same end, are the following problems:

The use and conservation of natural resources.
The ethical basis of private property.
The ethical basis of taxation.
The justification of public expenditures and their limitations.
The social function of schools:
  What would happen to the modern world if all schools were discontinued? Would the

money saved in any way compensate for the social losses?

The social purpose of the family and its ethical standards.

What is justice?

The great historical conceptions of justice.

Application of the facts of the social inheritance and human solidarity to solution of this problem.

The ethics of student life and student organizations.

The ethics of capital and labor; of business and vocations; of church and charities.

Application of ethical principles to the functions of the state.

What standards should be maintained by county, town, city, state and nation?

What moral principles should control in legislation and public administration?

The moral obligations of citizens as such; of public officials.

The mutual obligations of private citizens and public officials.

The meaning of democracy and the dangers that beset it.

International relations and obligations.

The meaning of human brotherhood and the common goal toward which humanity is striving.

This may seem a pretentious program. From one point of view it is, but it is worth while, and it can be carried out. It has been tested and developed, in our experience, through a period covering fifteen years; it is now taught in many high schools and in several colleges and normal schools.

As to methods, the students should be encouraged to observe the social phenomena about them, and to exercise their own moral judgments in solution of current social problems. To this end the civic life of the school, and the larger community of which it is a part, should be more fully utilized in ways corresponding to laboratory and field practice in biological science. Natural science teachers have long since condemned mere text-book work as woefully inadequate. The text-book alone is no less inadequate in the field of social ethics.

The course here outlined can not succeed with a teacher who is a mere visionary or a purveyor of facts without ideals; nor can the course fail under a trained teacher of wholesome personality, thoroughly grounded in ethics and the social sciences, and having first-hand acquaintance with and interest in the problems of his community—in other words, a practical idealist professionally trained for this particular business.

MILTON BENNION

UNIVERSITY OF UTAH,
SALT LAKE CITY

EDUCATIONAL EVENTS

INTELLECTUAL CURRENTS IN GERMANY TO-DAY

FOLLOWING his recent visit to his fatherland, Professor Kuno Francke, of Harvard University, presents in the June *Atlantic Monthly* a study of intellectual currents in contemporary Germany, including much relating to the educational life of the country. Professor Francke refers, at the outset, to "the splendor of the Wilhelminian age," when "the German universities and polytechnics were unquestionably the most productive institutions of research in the world and attracted a body of students who in methodical training and thoroughness of scholarship surpassed the youth of most other countries."

The intellectuals of the old régime have found it hard to realize that "this mighty empire and this brilliant civilization rested after all upon feet of clay, that they had been put in the service of a policy which ignored the fundamental conditions of healthy progress, respect for personal freedom and earnest desire for international brotherhood." Professor Francke writes:

What a service could these intellectuals have rendered to the young struggling German Republic, and thereby to the Fatherland, if they, particularly the teachers in the Gymnasia and the university professors, had wholeheartedly accepted the new political responsibilities which the collapse of the old order brought for them; if they had earnestly pledged themselves to the Weimar Constitution and the ideals of popular government contained in it; if they had made themselves the mouthpiece of an enlightened internationalism. Instead of that, a defiant pessimism seems to have settled upon the minds of most of these men. They take no part in the efforts to substitute a new public consciousness for the played-out monarchy; they ascribe all popular misery to what they call Socialist misrule or Jewish conspiracy; they rail at all measures of internal reform; they clamor for a return to Bis-

marckian principles; they even acclaim the methods of a Ludendorff.

Professor Francke reviews a book of Oswald Spengler, "Doom of the Occident," which brilliantly represents the resentment and despair now so prevalent.

The reverse side of the situation is then shown:

Professors of many different German universities were unanimous in telling me last summer that they never had had such students as now. A feverish thirst for learning, they said, seemed to have taken possession of them; and no privations or hardships, no unheated rooms, no lack of light, no empty stomachs, no threadbare clothes, no difficulties in obtaining a book or scientific instrument, no hard bodily work in factories or warehouses could dampen the enthusiasm with which these youths plunged into intellectual pursuits. It was natural that under pressure of economic distress a majority of the students should turn to the technical and exact sciences; but the humanistic studies also, such as philosophy, history of literature, history of art, showed no marked decrease in numbers, and surpassed former times by the ardor and devotion of their followers.

These testimonies of professors are borne out by many manifestations of university life that have come to my notice: artistic achievements such as the annual Händel festivals at Göttingen; welfare movements such as the widespread activity of student organizations in support of Professor Damaschke's schemes of land-holding reform; moral efforts such as the propaganda of the Eucken Alliance for cultivation of liberal and enlightened religious views—all symptoms of an academic idealism which in the midst of national collapse stands out for the reconstruction and heightening of individual life.

Professor Francke characterizes the work of three leaders in Germany who stand for a new ideal of life—Friederich Wilhelm Foerster, Rudolf Steiner and Count Hermann Keyserling. He concludes that the constantly widening influence of these men, particularly Count Keyserling, "seems a pledge that the remaking of the national type . . . is bound to become a reality."

STUDENT TRAVEL FOR FOREIGN SERVICE TRAINING

SUPERVISED student travel in foreign countries as a factor in foreign service training was considered at a conference in Boston, on June 4, held under the auspices of the National Council on Foreign Service Training. Dr. Glen Levin Swiggett, of the United States Bureau of Education, who acted as chairman, said:

The National Council on Foreign Service Training is endeavoring to create sentiment for a liberal programme of student travel in foreign countries. Americans have the habit of travel. In consideration of the value that should accrue to our country by properly supervised travel, student travel in particular, there has, however, been great wastage both of effort and of money. The council now has under consideration a plan whereby present efforts and methods can be coordinated, with the hope that the colleges and universities will ultimately accredit supervised travel of this character. Twelve of our larger universities have reported organized effort for supervised student travel, the major purpose of which with the larger number is cultural. Some, however, report that the purpose of student travel is to further a scientific or commercial career. The area of student travel is almost entirely that of western Europe. Student travel in Latin America is reported by four institutions, and in the Far East by one. Eleven of these institutions definitely state that academic credit for travel will be given if directed by their own institution; most of them are willing to give credit for travel directed by another institution. A majority of the replies received from forty-five additional institutions indicate sympathy with the idea of accredited supervised student travel, and many of them say that soon they hope to have organized effort for student travel of this character.

Others who discussed the proposal, as reported by the Boston *Transcript*, were Clinton L. Babcock, manager of tours and cruises of the American Express Company, James H. Turner, of the United States Lines, and Charles E. Bailey, New England Passenger Agent for the Dollar Steamship Line. Mr. Babcock asserted that "educational travel is showing constant improvement in method." He also called attention to the special effort of the steamship companies to make available their third class for purpose of student travel, offering round-trip rate only slightly in excess of one way second class.

Mr. Bailey said:

Whether or not we hold first place in the markets of the Far East is dependent upon whether

we are willing to send our young men out there to learn conditions and to make personal friendships among the prospective buyers of American goods. Our business colleges should in some way make it possible for groups of students under the direction of a faculty member, or simply an independent student traveller, to secure credit toward a degree for definite studies worked out abroad. A ruling of this sort would stimulate interest in foreign travel.

A CONFERENCE ON SCHOOLS AND DELINQUENCY

A CONFERENCE on "What the schools can do to prevent delinquency" has been arranged by a temporary committee in connection with the annual meeting of the National Education Association at Washington, on July 3. "The schools and the delinquent child" will be the title of the address by Miss Olive M. Jones, president of the National Education Association. Dr. Bernard Glueck, formerly director of the Bureau of Children's Guidance, New York City, will speak on "Psychiatry and the understanding of behavior problems."

In order to focus attention upon practical effort and develop action, the committee in charge of the program has suggested that the discussion at the meeting be centered upon the following propositions:

1. That educators, social workers and parents recognize their interest in the problem child.

2. That plans be made to disseminate among teachers, parents and social workers information regarding problem children and wise methods of treatment.

3. That periodic conferences be arranged for the interchange of information and experience among these groups.

4. That, in view of the strategic position of the school in all treatment of problem children, such conferences be called at the next annual meetings both of the National Education Association and of the Department of Superintendence.

5. That this group requests the National Education Association to appoint as one of its standing committees a Committee on Behavior Problem Children, and that such committee be requested to take steps for the arrangement of conferences as above suggested and for permanent organization.

PUBLIC HEALTH SUMMER SCHOOLS

FOUR public health summer schools are to be held this year in cooperation with the United States public health service. The schools will be located at Columbia University, the University of California, the University of Iowa and the University of Michigan. These schools, which will be in session from six to eight weeks, are an outgrowth of the short-term institutes that have been held.

The aims of the schools, as stated in the announcement of the public health service, are: (1) to provide intensive training for all persons engaged in any kind of public-health work; (2) to furnish up-to-date instruction which will enable practicing physicians to deal effectively with the more important causes of mortality and disability, especially cases referred by industrial clinics, school clinics, public-health nurses and similar agencies; (3) to bring together practicing physicians, health officers and other sanitarians, and thus to establish a more cooperative relationship in the work of disease prevention.

The chairman of the advisory committee to the Surgeon General on the Education of Sanitarians, which has general oversight of the summer school work, is Dean David L. Edsall, of the Harvard University School of Health. Professor C. E. A. Winslow, of Yale, is the vice-chairman, and A. J. McLaughlin, of the United States Public Health Service, is secretary. The other members of the committee are: A. C. Abbott, director, school of hygiene and public health, University of Pennsylvania; C. C. Bass, dean, college of medicine, Tulane University; Haven Emerson, professor of public health administration, Columbia University; W. H. Howell, assistant director, school of hygiene and public health, Johns Hopkins University; Edwin C. Jordan, professor of bacteriology, University of Chicago; William H. Park, professor of bacteriology and hygiene, University and Bellevue Hospital Medical College, New York City; W. S. Rankin, secretary, North Carolina State Board of Health; Wickliffe Rose, president, General Education Board; M. J. Rosenau, professor of preventive medicine and hygiene, Harvard University; Frederick W. Sears, sanitary supervisor, New York State Department of Health; John Sundwall, division of hygiene and public health, University of Michigan; C. E. Turner, assistant professor, department of biology and public health, Massa-

chusetts Institute of Technology; Henry F. Vaughan, commissioner of health, Detroit; Victor C. Vaughan, professor emeritus of hygiene and physiological chemistry, University of Michigan; William H. Welch, director, school of hygiene and public health, Johns Hopkins University; Ray Lyman Wilbur, president, Leland Stanford Junior University; Ennion G. Williams, State Commissioner of Health, Virginia, and Linsly R. Williams, managing director, National Tuberculosis Association.

THE BROOKWOOD TRADE UNION SUMMER SCHOOL

PLANS for the summer school for trade unionists and union teachers to be held at Brookwood Labor College, Katonah, N. Y., July 7 to 20, are nearly completed. The advance program contains the following:

CONFERENCES ON LABOR PROBLEMS

July 7. Nationalization of coal mines. Discussion leader, Chris Golden, president District 9, United Mine Workers of America.

July 8. Labor's responsibility in production. Leader, Stuart Chase, member of the staff of the Labor Bureau.

July 9. The problem of stabilizing industry. Leader, Dr. Leo Wolman, New School for Social Research.

July 10. New meaning and new methods of collective bargaining. Leader, Dr. Wm. M. Leiserson, University of Toledo.

July 11. Some new developments in industrial relations (company unions). Miss Mary Van Kleeck, Research Department of Russell Sage Foundation.

July 12. Government intervention in trades disputes. Leader, Ben Seleckman, Research Department of Russell Sage Foundation.

July 14. Women in industry. Leader, Miss Theresa Wolfson, studying this subject in cooperation with the American Federation of Labor.

July 15. Cooperation between organized labor and management in the railroad industry. Leader, Otto Beyer, of the Labor Bureau.

July 16. The amalgamation movement. Leader, Benj. Stolberg.

July 17. The labor bank movement. Leader (probably), Peter Brady, president of the Federation Bank of New York.

July 18. The labor press. Leader, Norman Thomas, formerly editor-in-chief New York *Leader*.

July 19. New sources for wages. Leader, Dr. Walton H. Hamilton, of the Institute of Economics and the Graduate School of Washington University.

CONFERENCES ON CONDUCTING PUBLIC DISCUSSION

One week beginning July 7. In charge of Dr. Alfred D. Sheffield, of Wellesley College, and the Boston Trade Union College.

CONFERENCES ON THE TEACHING OF ECONOMICS

One week beginning July 14. In charge of Dr. Walton H. Hamilton.

CONFERENCES ON THE TEACHING OF ENGLISH FOR WORKERS

Two weeks. In charge of Miss Ellen Kennan, of the School for Printers' Apprentices, Typographical Union No. 6, New York.

EVENING SESSIONS

One or two evenings will be devoted to musical programmes. Dr. H. W. L. Dana will lecture two evenings on literary masterpieces. A couple of evenings will be set apart for speakers on the political situation, which should afford abundant material for discussion at that time, immediately after the various party conventions have been held.

SPECIAL CONFERENCES

Sunday, July 13. Arrangements are being made for special conferences on this date at which it is expected that a number of prominent labor men and women, as well as educators, will be present. The subject for discussion will be, What labor expects and desires of teachers in workers' education enterprises.

EDUCATIONAL NOTES AND NEWS

KATHERYN NEWELL ADAMS, formerly dean of women at Beloit College, Wisconsin, succeeds Dr. Mary Mills Patrick, as president of the American College for Women in Constantinople. Miss Adams has been a member of the faculty since September, 1920.

HERBERT E. BOLTON, professor of American history at the University of California for the last twelve years, has been appointed president of the University of Texas.

DEAN EDWARD MORGAN LEWIS was elected acting president of Massachusetts Agricultural College on June 9, to take the place of Kenyon L. Butterfield, who resigned as president, May 16.

THOMAS A. SMIDDY, formerly professor of economics at Cork University, has been appointed minister plenipotentiary of the Irish Free State at Washington. Professor Smiddy has been in the United States for some time, representing the Free State unofficially.

PROFESSOR HENRY SEIDEL CANBY, of Yale University, is editor-in-chief of the *Saturday Review of Literature*, created since the sale of the New York *Evening Post*.

THREE new appointments and an exchange professorship on the faculty of Hamline University have been announced by President Samuel F. Kerfoot. The new members are Dr. Walter A. Kenyon, University of Wisconsin, who will teach biology; Dr. Frank Huckman, Northwestern University, who becomes a member of the department of religious education, and Dr. Everett D. Wells, University of Minnesota, who will teach physics and mathematics. T. P. Beyer, professor of English, will go to Tsing Hua University in Pekin, China, relieving Dr. S. Smith, who will teach at Hamline University for one year. Ethel Ackerman, instructor in English, and Franklin C. Banner, professor in journalism, have been granted a year's leave of absence to study abroad.

DR. HERBERT W. ROGERS, at present engaged in research work for the National Research Council at the University of Minnesota, has been appointed associate professor of psychology at the University of Vermont.

YVONNE IMBAULT-HUART, now in charge of the Maison d'Education of the Legion of Honor in Paris, and Pierre Dupont, who is in America to prepare for a diplomatic career, will be members of the French faculty at Smith next year.

PROFESSOR ANGELO LIPARI, of the department of Romance languages of the University of Wisconsin, who has been in charge of the Italian courses for the past four years, has resigned to accept a position as associate professor of Italian at Yale University. Professor Joseph Louis Russo, of Allegheny College, will take up Professor Lipari's work at Wisconsin.

DR. ALBERT C. HILL, chief of the special schools bureau of the New York State Department of Education, who since 1894 has been connected with the department, will retire on July 1. In accepting his resignation the regents expressed regret at his departure and appreciation for his long and faithful service. Since 1904, Dr. Hill has had charge of the special schools, including Indian, deaf, blind and prison schools.

SUPERINTENDENT JOHN R. PATTERSON, of Bucyrus, Ohio, has been elected superintendent of schools at Athens, Ohio.

DOUGLAS GORDON MILLER, rector of the Aberdeen Grammar School, has been appointed high master of the Manchester Grammar School, in succession to J. L. Paton, who will retire in July after 21 years' service.

SAO-KE ALFRED SZE, ambassador from China to the United States, was one of twelve recipients of honorary degrees from Syracuse University at the commencement exercises held in Archbold Gymnasium on June 9. Dr. Sze received the degree of Doctor of Laws. Degrees of Doctor of Laws were also given Henry S. Graves, dean of the college of forestry at Yale University, and Dr. Frank M. Smalley, vice-chancellor emeritus of Syracuse University.

THE University of New Mexico conferred the honorary degree of doctor of laws on Dr. John J. Tigert, United States commissioner of education, who delivered the commencement address on June 6.

THE degree of doctor of science has been conferred on Maximilian Toch, of New York, by the Peking University at the instance of the Chinese government. This is the second time Dr. Toch has been honored by that government at whose invitation he is traveling in China delivering lectures on wood oils and the means of correcting their adulteration.

WILLIAM CHURCHILL HAMMOND, for twenty-five years head of the department of music at Mount Holyoke College, has been awarded the degree of doctor of music by the college.

DR. CHARLES ALEXANDER RICHMOND, president of Union College, sailed on June 14 for Scotland to receive from St. Andrews' University, June 27, the degree of doctor of laws.

PRESIDENT KENNETH C. M. SILLS, of Bowdoin College, delivered the commencement address at Mount Holyoke. His subject was "The two-fold function of the college: critical and creative."

PROFESSOR CHAUNCEY B. TINKER, of the department of English literature at Yale University, delivered the commencement address at Smith College.

THE commencement exercises of the Municipal University of Akron were held from June 14 to 18. Former Provost Edgar F. Smith, of the University of Pennsylvania, delivered the commencement address. A special feature of the exercises was the dinner tendered to Dr. Charles M. Knight, professor emeritus of chemistry, by his former students, in honor of Dr. Knight's fiftieth year of connection with the university.

DR. JOHN LIVINGSTON LOWES, professor of English at Harvard University, made the address at the Simmons College nineteenth commencement exercises, held at Harvard Church, Brookline.

GIOVANNI PAPINI, Italian author, who was to have lectured at Columbia University this summer, has cabled the university authorities that ill health prevents his coming.

THE new $300,000 senior high school at Owensboro, Ky., was opened with an address by Arthur Y. Ford, president of the University of Louisville. J. R. Laswell is the president of the board of education, J. L. Foust is superintendent and J. L. Lewis principal of the new school.

AMONG those sailing for Europe are: Professor Raymond Walters, dean of Swarthmore College; Dr. Arnold Gesell, clinical psychologist and professor of child hygiene in the Yale Graduate School; Professor Arthur Wheeler, of Bryn Mawr; Dr. Henry Friedenwald, professor of ophthalmology in the University of Maryland.

LORD KENYON, pro-chancellor of the University of Wales, represented the English group of founders of Kenyon College at Gambier, O., which opened its four-day centennial on June 14. The college at Gambier was named after Lord Kenyon's great grandfather.

DR. EDWIN E. SPARKS, former president of the Pennsylvania State College, and recently a special lecturer in American history on the college faculty, died from a heart attack on June 15.

DR. C. ALPHONSO SMITH, head of the department of English at the Naval Academy, died in Annapolis, on June 13.

THE report of the joint congressional committee on the reorganization of the executive departments of the federal government, submitted June 3, recommended the establishment of a new cabinet post of education and relief. This is regarded as a compromise measure for the department of education advocated by the National Education Association and other educational organizations. The recommendation of the congressional committee is similar to the plan presented more than a year ago for the establishment of a department of education and public welfare. Concentrated in the proposed new department would be the work now performed by the United States Bureau of Education, the Veterans Bureau and the Public Health Service.

STUDENTS of Clark University have by a vote of 70 to 15 adopted resolutions expressing confidence in President Wallace W. Atwood. The resolutions in part set forth: "The statement signed by 'prominent alumni' of the university of the eastern states to the effect that the present administration has been unable to maintain the confidence of the students at Clark University, is without foundation in truth. The undergraduate body of Clark University have the fullest confidence in President Wallace W. Atwood, his administration and the policies governing its actions." The resolution itemized changes which have been accomplished by the present administration for the good of the university.

THE Oregon law requiring attendance at public schools, to the exclusion of private and parochial schools, has been declared unconstitutional by the federal court at Portland, Oregon. The decision was the result of an injunction brought by Hill Military Academy against state officers to prevent them from executing the law. The law was strongly opposed by the private and parochial schools of the state. The court holds that the rights of parents and guardians were

disregarded by this legislation. An appeal will be made to the United States Supreme Court.

IN an effort to place the Chicago school board on an efficiency basis, a bill will be introduced in the state legislature making the office of school board president a salaried one. Under the plan, the president will devote practically all his time to school work and will be paid a salary of $15,000 a year. The need for such a change was made apparent at the meetings of the board when the 1924 school budget was in process of completion. Hundreds of thousands of dollars, it was pointed out, would be saved by increased efficiency and the personal supervision of the president.

INCLUDING all forms of expenditure which come within the purview of the Board of Education, such as expenditures from public funds on universities, agricultural education and on reformatory and industrial schools, in addition to elementary and higher education, the total sum to be expended on education in England and Wales during 1924–25 is estimated at £74,720,000, as compared with the provisional amount of £72,677,000 for 1923–24.

THE Rockefeller Foundation has voted an appropriation for a period of five years to cover the expense of development plans submitted by the American University of Beirut for its medical school. With the assurance of the new program this school will rank with Class A medical institutions of the United States and Europe. The grant of funds provides for additional professorships, instructor fellowships, laboratory equipment and medical periodicals. At the same time the university is expected to carry out independently its plans for development in other departments and its campaign for adequate endowment.

A GIFT of $125,000 to Columbia University for the purchase of additional land to complete the athletic grounds known as Baker Field has been given by George F. Baker, who recently gave Harvard University $5,000,000. In January, 1922, Mr. Baker gave $700,000 to the university to buy twenty-six acres for the athletic field. The new gift has been used to buy a strip of land 650 feet long and about 100 feet deep, which makes Baker Field complete. Development of the project, started a year ago, will cost $3,000,000.

ARTHUR LEHMAN, a Harvard graduate, has given $200,000 to Harvard University for the construction of a new administration building, in honor of the thirtieth anniversary of his graduation from the university. Announcement was made in Boston on June 12 by Bishop Lawrence, chairman of the Endowment Fund Committee, that Mr. Lehman's gift was not made to be included in the $10,000,000 fund being raised for the development of the departments of chemistry, business and fine arts. Mr. Lehman said that, other than using the money for the construction of an administration building, there were no stipulations as to how it was to be expended. He said that the building would be of colonial style architecture to conform with the other buildings in the college yard. The new building will be erected at the southwest corner of the yard, opposite Harvard Square on the site of Dana Hall, destroyed by fire in 1917.

PRESIDENT CHARLES WELLES GROSS, of the board of trustees of Hartford Seminary, Hartford, Conn., announced at the commencement of the seminary on May 28 a gift of $75,000 from Dean Edgar H. Knight and his three daughters, to be used for a new recitation building. This amount, together with $250,000 from the Samuel P. Avery Fund for a library building and additional funds from the proceeds of the sale of the present seminary property, is understood to make possible the erection of four or five buildings on the new campus.

ANNOUNCEMENT was made at the Washington University commencement exercises on June 12 of a $20,394 endowment for the institution's law library, given by Mrs. Arthur O'Brien, of Washington, D. C., in memory of her father, Henry Dodge Estabrook.

THE Julius Rosenwald Fund is to supply funds for the construction of 29 schools for negroes in Alabama during the year beginning July 1. The total amount which will be given to the state from the fund during the year will be $22,900. Twenty-five of the buildings will be for school purposes and will consist of from one to six-teacher schools. During the coming fiscal year, Mr. Rosenwald, of Chicago, has set aside $450,000 for negro rural school projects in fourteen southern and western states. This is in addition to a $25,000 reserve

fund and more than $25,000 for administrative expenses, making a total of half a million dollars for the entire appropriation.

STATISTICS of school building construction in New York City since January 1, 1918, reveal facts about the size of the school building program which has been under way, and the present status of the school construction work. For the period between January, 1918, and March, 1924, the building department of the schools completed and opened 93 elementary school buildings and five high schools costing more than $40,000,000 and provided a seating capacity of 87,130. There were under construction on March 13, 1924, new school buildings and additions which when completed will provide 118,899 new sittings at a total cost estimated at $72,660,763. Since March, 1924, contracts for a number of other buildings have been awarded bringing the total up to approximately 150,000 sittings. Of the 82,348 elementary sittings in buildings opened between January, 1918, and March, 1924, 41,354 were in Brooklyn, 19,125 in the Bronx, 11,825 in Queens, 8,366 in Manhattan, and 1,678 in Richmond Borough. The high school sittings opened included 2,200 in Brooklyn, 1,966 in Queens, and 616 in Richmond Borough. On March 13 last, there were under construction 113,899 new sittings, of which 92,858 were elementary and 26,041 were high school. Of the total 43,445 are in Bronx Borough. Next in line for relief are the schools of the Bronx, for which 31,729 new sittings are being provided, or 28,341 for elementary and 3,388 for high school. The total cost of the building program is estimated at $72,660,763, divided between the elementary and high schools of five boroughs.

A SCHOOL building program to give immediate relief to 54,000 Chicago school children housed in portable buildings, and to take care of an anticipated increase in population, is contemplated by Superintendent William McAndrew. A census of the regions where school facilities have been outgrown has been completed and each building has been placed in the order of its urgency. The construction work is to be begun under the direction of Mr. Edgar W. Martin, supervisory architect. To show the urgent need of more school buildings, it is pointed out that the 25 new structures now in course of completion will accommodate approximately 18,000 children. At the same time there is an estimated normal increase of 20,000 pupils each year.

DISCUSSION

WHAT DOES CLINIC MEAN?

IN educational literature we seem to be bent upon making ourselves the poor relation of all the other professions. We talk about the "case method," "educational engineering," "child accounting," "surveys," "diagnosis," etc., and very often indeed, about the "school clinic," "habit clinic," "vocational guidance clinic," "psychological clinic," and the "clinical method."

Now the word "clinic" comes from a Greek word meaning "bed," and educational people who use the word, whether philologists or not, might occasionally think back to the original root, or at least endeavor to trace logical connections if any can be found.

What does *clinic* mean, as used in educational literature? Does it mean bedside education? Does it mean individual education? Does it relate to doing something, presumably by an educator, at the bedside of a child? Is it, perhaps, a method of instruction, as in the medical school, in which a child is used for discussion in a class of education? If so, is he a normal child? Perhaps it has nothing directly to do with education itself, but only with the numerous forms and rites with which we are surrounding education, such as testing, classifying, transferring or promoting.

Confusion worse confounded! Even so, what exactly does the word imply? Is the child in question a special problem, so that "clinic" refers to the educational treatment of an individual child when something is the matter with him? Or is it just plain educational help to any *individual* child? This last definition would seem to fit a large number of facts which have recently come under the observation of the writer. Yet recently an educator, big as any of the rest, spoke of the "clinical method in education," when, obviously, he meant the problem or project or case method of teaching a class in education. Thus, if I teach the principles of vocational guidance by laying before my class the administrative problem in which

Baltimore finds itself, so far as vocational guidance is concerned, and ask the class to discuss the best method of improving the organization of vocational guidance in the Baltimore schools, I am using, according to this writer, "the clinical method." Obviously, however, there is no bed and no individual child.

We are forced, therefore, to ask the question, "What does clinic mean?" When we receive the answer we shall know what to expect when we are introduced to a child clinic, or child welfare clinic, or clinical department, whether organized in a school system or in a college department of education.

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QUOTATIONS

EDUCATION IN THE FREE STATE AND IN NORTHERN IRELAND

A rivalry of the healthiest kind has begun between the educational authorities of the Free State and of Northern Ireland. It is a rivalry in which the success of one can not but benefit the other—that is, of course, if the less successful has the sense to follow a good example. A few weeks ago the syllabus for secondary schools issued by the Free State Ministry of Education was noticed in this column; Northern Ireland has now published its syllabus for 1925, and comparison between the two is inevitable. A circular to school managers draws attention to the most interesting points of the Northern syllabus, and of these points the most interesting will probably be found in regulation 7. By this regulation the estimate formed by the teachers of their pupils' capacities must be sent in yearly to the Ministry on or before June 1. It is hoped by this means "to associate in some measure the examiner and the teacher," and it is apparently intended to give the teacher a voice in the awarding of the certificates. The writer of these notes does not know whether anything like this has ever been tried elsewhere, but to one accustomed to the austerity of the old Intermediate régime this attempt of the higher powers to get behind the written word to the personality of each candidate is amazing. It is recognized by the authorities to be an experiment; "if it has favorable results, its scope may be extended in future years."

In the language programs the Northern authorities differ considerably from those of the South. Set books have been banished from the Free State syllabus; the North retains them. In modern foreign languages the Free State has gone far along the lines approved by the apostles of the direct method; Northern Ireland is much more conservative. The Northern authorities recognize that there is a risk of cramming when books are prescribed, but, on the other hand, they believe that, without set books, teachers desirous of preparing their pupils to translate "unseens" of various kinds will be tempted to give their pupils short extracts instead of whole books. They also believe that the examiner who knows his business will be able to tell the difference between the merely verbally correct answer and the answer which is the outcome of real knowledge. Perhaps so; but the most skillful examiner will do well to begin the winnowing of the wheat from the chaff before he begins the marking of the papers. In other words, he will devise examination papers with an eye to the confusion of the smatterer. It is to be noted that the Northern examination papers will be graded so as to give pupils of average ability a reasonable chance of passing, and at the same time to give the cleverer pupils a chance of distinguishing themselves. Among innovations educationists will notice with interest the introduction of an oral examination in modern languages for candidates for the leaving certificate, and the introduction of a practical test in the science examinations.—*The London Times Educational Supplement.*

SOCIETIES AND MEETINGS

THE AMERICAN ASSOCIATION OF UNIVERSITY WOMEN

"The part to be played in the life of American countries by such organizations as the American Association of University Women is assuming a new and deeper significance," said recently Dr. Leo S. Rowe, director of the Pan-American Union.[1] That this is realized by college women themselves was evinced by their

[1] At a Pan-American meeting on April 21, during the convention of the A. A. U. W.

great interest in the last annual convention of the A. A. U. W., held at Washington, D. C., April 21-25, and by the presence there of about 500 delegates from all parts of the country.

Membership in the association has recently been increased to more than 19,000. This numerical extension is due to the campaign instituted for an increase in numbers, and to several deeper causes. Chief among these may be reckoned interest in the new national clubhouse at Washington and in the paying off of the indebtedness on this house; the adoption by the association during the last year of a definite program of educational study; the ever-widening scope of women's activities which the association represents; and the growth of the international spirit together with the appeal made to college women by the manner in which this spirit is fostered and expressed by the association.

In her opening address the president, Dr. Aurelia H. Reinhardt, who is president of Mills College, California, stated that the A. A. U. W. now stands at a point where it can view clearly its past achievements and look forward definitely into the future. The executive secretary, Dr. Mina Kerr, has labored valiantly, and her report, as well as that of Mrs. Walter DuBois Brookings, chairman of the Washington Fund Committee, disclosed the fact that about $112,000 out of the $200,000 indebtedness on the national clubhouse has now been pledged. Gifts in honor of early members and friends of the education of women are especially desired. Some of these *in memoriam* contributions are a touching feature. That from the Alpha Chi Omega fraternity is in memory of May Allinson, formerly head of the research department in the Women's Educational and Industrial Union, Boston; that from the Valley City, North Dakota, branch, in memory of Mrs. L. B. Perrine, oldest woman graduate in the world when she died three months ago at the age of 92, and the 28th woman in the United States to get a degree.

The report of Mrs. Frances F. Bernard, the educational secretary, who is soon to take up her new duties as dean of Smith College, recorded the following facts: Since July last, 110 round tables have been established in branches,—34 on elementary education, 23 on the pre-school child, and 53 on international relations. Many other branches have had monthly programs on these special topics. Further, the sum of $27,000 has been secured from the Laura Spelman Rockefeller Memorial, for the purpose of promoting during two years and three months the elementary and pre-school child study projects, with the prospect, if not the promise, of further support at the end of the period designated, in case success attends the first efforts and a developed plan demanding more support can be shown. This $27,000 will be used for experiments and studies, and, in general, for forwarding modern education, first, through studies of the pre-school child in small groups of college women under the supervision and direction of the educational secretary; second, through studying elementary education in study groups. The purpose of the pre-school child study is the training of parents and of leaders for parent training; of the elementary school study, to bring the theories, standards and experiments of modern education before college women all over the country.[2]

Speaking on the "Possibilities in the elementary school project" during the educational meeting Tuesday forenoon, Miss Agnes L. Rogers, professor of psychology and education at Smith College, demanded that the women of the country become a power for progress in the public school system. She would have them "see to it that the schools of their own communities are kept abreast with modern educational developments, that they are not made the football of politics, and that adequate appropriations are placed in the city budgets. . . . . College women must be divided into two groups in their own communities—one, a study group to keep up with educational developments, and second, a 'watching committee' to protect the schools from the attacks of politicians, economy enthusiasts and the like, who have too often preyed upon the educational system, with no voice raised in protest."

College groups in the community must stand behind every movement for progress in methods of education, declared Miss Rogers, if we are not to have a static condition of the public schools. Modern developments such as the junior high school movement, the Dalton plan and similar projects should be seriously studied

[2] See SCHOOL AND SOCIETY for April 5, 1924, pp. 400–401.

by members of the association, who must then in turn interpret them to the public. "There ought to be a college group in each community to bring modern methods into the public schools."

Dr. Helen Thompson Woolley, psychologist and assistant director of the Merrill Palmer School at Detroit, followed Miss Rogers with an extremely interesting address upon the "Significance of the pre-school age." The facilities offered by the nursery school at Detroit for investigation of the problems presented by early childhood—its psychological laboratory, its consultation center for diagnosis and advice, the opportunities for personality studies afforded, and the admirable school equipment for training in the health and nutrition of young childhood, were all set forth. Mrs. Woolley also illustrated her statements by concrete examples, often of a most amusing nature. Reports from round table groups on the pre-school child proved also most illuminating.

At the public meeting on Tuesday evening "Responsibility of university women in public affairs" was the general subject considered. Mrs. Cornelia James Cannon, of Cambridge, Massachusetts, who spoke on responsibility in public education, pleaded for the discouragement of intellectual snobbery among college graduates. She declared that there is a real danger of overestimating the cultural quality of liberal arts courses given by colleges and universities and a tendency to exaggerate the value of university training, which makes for narrowmindedness and egoism. She therefore exhorted the delegates to the conference to stress the "service purpose" in education. "From the point of view of the community," she said, "education is not a gift to the able, but an investment for the future." The personal contribution of college women to the cause of education can be to cultivate such an attitude to the subject-matter of educational endeavor that this will prevent any venture into the field of learning from seeming final and will keep the college women themselves open to new ideas and new truths. They should make themselves intelligent servants of public education by knowing the local school as they know a beloved neighbor. Mrs. Cannon also stressed the importance of elevating the standards of the teaching profession by assuring adequate pay as compared with other professions. "Depletion of the ranks of teachers is bringing the public school system face to face with a most serious situation," she stated. "We must employ every effort to see that the salaries of the teachers in this country bear a definite relation to the earning capacity of educated women in other fields . . . . for we can not afford to spare our ablest women for devising new stimuli for the buying public, while the schools are managed by those who are unable to do anything else."

Other speakers on Tuesday evening were Mrs. Ida Clyde Clarke, associate editor of the *Pictorial Review*, who discussed college women's responsibility to the strongest of all educational agencies, the public press; Miss Mary Van Kleeck, of the department of industrial studies, the Russell Sage Foundation; and Miss Grace Abbott, chief of the Children's Bureau.

Not only have the members of the A. A. U. W. been engaged for the past year in a study of the national public school system and the national problems of industry as these affect women, but they have turned their attention also to the housing problem in our country and most enthusiastically to our relations with university women of other lands. There has been a committee on housing, of which Mrs. Edith Elmer Wood is chairman. In connection with the work of the sub-committee on housing of women students in universities and cities, which interested itself in living conditions among women students, a novel move was started for the installation of college courses "in the accepted conventions of society." So many grades of homes are represented in the colleges to-day that the college must indicate the accepted standard. It was even suggested by the committee that several colleges might unite in appointing a woman as a traveling lecturer in this field.

One of the most important labors of the association is the establishment and maintenance of fellowships. As more and more international fellowships are being founded, the report of the fellowship committee, given on Tuesday, is naturally linked with the report of the committee on international relations, presented on Wednesday. In the former of these Professor Rogers, the chairman, called attention to the cementing of friendship between women of the

United States and foreign countries accomplished by the international fellowships; 47 applications had been received for fellowships open to American women, while 18 members of 10 foreign federations had applied for the A. A. U. W. international fellowships.

President Pendleton, of Wellesley College, is chairman of the committee on international relations. Her report had regard:

First, to the work of Oriental students now enrolled in about 35 American institutions. This work is being studied by a special subcommittee, whose findings are to be published shortly and will contain valuable information on the status of Orientals in the colleges of this country and their particular needs in matters of curriculum.

Second, to the efforts that are being made to organize a federation of university women in Latin-American countries. These efforts have so far been unsuccessful, owing to the difficulty in forming a satisfactory standard for admission. Presidents of South American republics have been urged to appoint representatives to the third conference of the International Federation of University Women, to be held this summer in Christiania.

Third, to a plan for exchange of secondary school teachers with European countries. Such a plan has been drawn up and will be presented at the Christiania conference for approval.

Fourth, to a recent request that the association give its approval to a scheme for establishing a foundation for international fellowships.

The outstanding feature of President Pendleton's report was, however, an announcement of financial aid. The Carnegie Corporation, through the Institute of International Education, has made her committee an annual appropriation of $5,000 for five years to carry on its work.

A branch conference was held on Wednesday afternoon, at which were discussed the cooperation of branches with the national headquarters at Washington, of the headquarters with branches, and branch administration in general. Special conferences of the 10 different sections composing the association also took place.

Thursday morning was given up to group conferences. At the conference of trustees, where Mrs. J. W. Blodgett, a trustee of Vassar College, presided, attention was divided between the "Status of women in coeducational colleges and universities" and the "Actual accomplishment of women trustees as told in a questionnaire." At the conference of presidents, deans and professors, Dean Sara C. Lovejoy, of Lake Erie College, occupied the chair. Here the subject, "The share of the faculty as a body and as individuals in college administration," was introduced by President Helen Coolidge, of the Pennsylvania College for Women. It was discussed by Dean Helen M. Smith, of Western Reserve University, where the faculty enjoy exceptional rights and privileges, and by Professor Penelope McDuffie, of Converse College, who represented a more conservative type of institution. Dean F. Louise Nardin, of the University of Wisconsin, and Professor Emma Perkins, of Western Reserve University, offered pertinent suggestions upon the subject, "How can the college assist the A. A. U. W. in its organization?"; Dean Georgia L. White, of Cornell University, and Dean Mary Watson Green, of Rockford College, upon "What the A. A. U. W. can do for the college." Dean White thought the greatest service which the A. A. U. W. can perform in behalf of the college is to raise its intellectual standards and lead thereby to higher power of thought. A conference of affiliated alumnae associations was also held, and here it was sought to discover "What the alumnae associations can do for the A. A. U. W." and "What the alumnae associations get from affiliated membership in the A. A. U. W." "Women in the coeducational colleges and their assistance to the A. A. U. W.," as well as "Problems of cooperation with college executives," also received attention.

The resolutions adopted by the association on Friday endorse the research study into occupations for women conducted by the Women's Educational and Industrial Union; the cooperation of the United States with the Advisory Committee on Opium of the League of Nations; the promotion by the A. A. U. W. of the study of fine arts; and law observance as well as law enforcement. They provide for the accrediting of members of the A. A. U. W. to the committee on intellectual cooperation or similar committees of the League of Nations and for the appointment by the association of a commit-

tee for cooperation between women's organizations.

"Ancient ideas on the training of an ambassador" was the subject of a most delightful and scholarly address by the French ambassador at Wednesday's luncheon. M. Jusserand paid his women auditors the delicate compliment of frequent citation in Latin. The day before, at this midday function, opportunities for graduate study and research in the national capital had been considered. President W. M. Lewis, of George Washington University, and Dr. G. F. Zook, specialist in education, U. S. Bureau of Education, had enumerated the many facilities offered for research in Washington,—200 or more libraries, the National Research Council, the Institute of Governmental Research and other governmental research centers, the National Geographic Society, laboratories unnumbered, etc.; and Dr. Lucius Clarke, chancellor of the American University, in speaking of this school of political sciences, had placed great emphasis upon the problem where to find men. "The great problems we are going to confront," said he, "are international. They are our greatest problems even to-day, as we can see by the newspapers. And we must have men fitted to solve these problems."

Thus during the whole convention, internationalism was the note oftenest struck. The first open meeting, that of Monday evening, in the splendid Pan-American building, had as its speakers not only the director general of the Pan-American Union, but also the minister from Panama and women representatives of two southern republics. The international dinner on Thursday evening, the culminating event, was honored by women speakers from seven foreign countries and one representative from Canada.

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EDUCATIONAL RESEARCH AND STATISTICS

THE RELATION OF I. Q. TO THE PROGNOSIS OF SPECIAL CLASS PUPILS

IN the twenty-second biennial report of the department of education of the state of Minnesota for 1921–1922 are the following paragraphs:

> One of the most altruistic tendencies of modern education is the special provision for handicapped children in our public school system. In Minnesota this provision had its inception in 1915, when the legislature encouraged the establishment of special classes for defectives by granting fixed amounts of state aid to school districts for each child enrolled in any of the four classes recognized by law. These classes were the deaf, the blind, the defective speech and the mentally subnormal. To these were added classes for crippled children in 1921.
>
> The legislature has from time to time indicated its unqualified approval of this means of caring for these handicapped children by broadening the provisions for their training and increasing the amount of aid, as the need therefor has been shown. In 1915 the annual per capita aid . . . for the subnormal was $100.00 . . . . This amount of aid for mentally subnormal pupils being very close to the actual cost of instruction has remained unchanged.

In the same report appear these facts about special classes:

Year	Number teachers	Salary teachers	Books and Supplies
1920–1921	107	$158,344.52	$18,346.96
1921–1922	134	215,105.89	26,596.64

Year	Combined cost	Number pupils	Cost per pupil
1920–1921	$176,691.48	1,749	$126.31
1921–1922	241,702.61	2,195	$129.75

Similar data for regular elementary and high school pupils for the same period of time were:

Year	Salary teachers	Books and Supplies
1920–1921	$22,881,970	$1,760,957
1921–1922	24,769,122	1,714,769

Year	Combined cost	Number pupils	Cost per pupil
1920–1921	$24,642,927	505,681	$48.53
1921–1922	26,483,991	531,059	$49.87

From these figures, on the average per capita basis, it is evident that cost of teachers' salaries and of books and supplies for the education of the mentally subnormal pupils was 2.60 times as much as the cost of teachers' salaries, books and supplies for regular elementary and high school pupils. Furthermore, exclusive of the 1,950 inmates of the state school for the feeble-minded, the aggregate cost of these two items for such special class instruction in the state of Minnesota for 1921–22 was approximately a quarter million dollars ($241,702.61).

Other pertinent data are presented by Dr. Anderson.[1] His study of the problem of special classes for subnormals in 108 cities in the United States shows that in 1920 in those 108 cities there were 23,000 pupils in "special" classes, and that 1,292 teachers were employed to teach these pupils. The cost of teachers' salaries and of supplies for these 108 cities, figured on the Minnesota 1920–21 per capita basis, a method which gives this cost approximately correct, was three million dollars ($2,905,130), or more than the cost of the complete maintenance for the same time of one of our large Middle Western universities enrolling eight thousand students.

These few data serve to show that the needs of subnormal pupils are finally receiving recognition in our public elementary schools. The Minnesota law explicitly provides that those pupils of compulsory school age whose intelligence quotient, ascertained by a competent psychologist, is between .50 and .85 may enjoy the privilege of instruction in the "special" classes. That this is, as previously stated, an "altruistic" move is obvious.

Taxpayers and school administrators may, however, legitimately ask these questions: (1) What is the function of the "special class"? (2) What remedial effects are to be looked for from special class instruction? (3) What is the prognosis of a pupil who because of mental subnormality is assigned to the special class?

The most optimistic answers to these questions which the writer can vouchsafe are: (1) The special class should give a kind of instruction better suited to the needs of the subnormal than that which he would get in the regular classes. (2) The special classes offer no remedial effects other than those found in answer (1). (3) The prognosis of a pupil who because of mental subnormality is assigned to the special class is *a continuous assignment to the special class until he leaves school because he is beyond the "compulsory school age."*

This policy of *continuous assignment to the special class* is, in the writer's opinion, fundamental in the instruction of special class children. For instance, it would be hard to find any intellectual consistency in the administrative technique in the method of at least two city school principals which has come to the writer's attention. Their policy was to put a child into the "special class" for a period of three years, but at the end of that time to take him out of the special class and to reassign him to the regular grade, saying that the pupil had had three years in which "to catch up" with his grade.

This kind of technique is poor. On the one hand, if the assumption is that in three years besides doing three years of regular work the pupil has "caught up" or made up the work in which he had previously failed and consequently finds himself in a grade three years *in advance of* the one where he had previously been unable to keep up, the impossible has been expected of him. That is, pupils who because of native mental defect are unable to progress at a normal rate can not suddenly, *even in a special class,* acquire a rate of school progress which will enable them in three years to make up "back work" besides doing regular work. To do so would be equivalent to acquiring sudden precocity. Were such a thing possible it would be an irrefutable argument for putting all children into "special classes for subnormals."

On the other hand, if the assumption is that at the end of three years the pupil were put back into the *same* grade from which he had been removed, he would probably keep up with children in that grade for a while, because he has "made up" back work and because chronologically he is three years older. Eventually, however, he would again fall behind. In short, either assumption has neglected the fact that at any time the subnormal has two outstanding handicaps to regular school progress—(1)

[1] Anderson, A. A., "Education of mental defectives in state and private institutions in special classes in public schools of the United States," *Mental Hygiene,* Vol. V., No. 1, Jan., 1921, pp. 84–122.

Compared with normal children of his age he is behind in mental growth, and (2) his rate of growth is less than that of the normal child.

Inasmuch as the criteria for assignment to "special classes" are (1) inability to keep up with normal children and (2) an intelligence quotient between .50 and .85, a number of interesting questions naturally arise.

(1) Is the normal child's rate of growth constant? That is, does the individual grow as much in his tenth year as he grew in his fifth year?

(2) Is the intelligence quotient constant? That is, is the development reached at the fifth year indicative of development at the tenth year, or at a given age with a reliable measuring device is it possible to make a permanent "mental classification"?

(3) Is there a more or less constant ratio between the subnormal child's rate of growth and the normal child's rate of growth?

(4) Does a constant ratio between the two rates of growth mean a constant intelligence quotient on the part of the subnormal?

It is commonly accepted that the yearly amount of mental growth is a decreasing variable, that is, the amount of growth is not the same year by year and the amount is constantly a decreasing one. Thus the child grows less the second year of existence than he does the first, less the third year than he does the second and so on until about the fifteenth or sixteenth year the amount of annual growth is zero or so nearly zero that the present mental tests are not fine enough to discern any further increase.

The Binet tests have been standardized for normal children so that passing the third year tests indicates that a child compares favorably with large numbers of third year children whose achievements served as a basis for the standardization of the tests. A year later passing the fourth year tests indicates that the child's mentality has grown so that he compares favorably with fourth year children, and so on through the scale. It would, however, not be correct to say that the amount of growth indicated by passing the fourth year tests a year after having just passed the third year tests indicates the same amount of growth as does passing the tenth year tests a year after having just passed the ninth year tests. Taking into consideration the fact that the rate of mental growth decreases, the tests are made to measure successive yearly growths as such. If the child tested is of the caliber of the children for whom the test was standardized, then his annual growths will correspond to theirs, his mental age will equal his chronological age, and consequently the ratio between the two ages—his intelligence quotient—will be 1.00.

Since 1912, when Stern and Kuhlman suggested the use of the intelligence quotient or I. Q. as a criterion of the mental level, the stability of this criterion has been questioned. In other words, investigators have questioned whether an intelligence quotient as derived from the Binet test at the age of 6 would be the same at the age of 15 for a given individual.

Terman[2] in 1916 found on retesting large numbers of children that the intelligence quotient did not differ by more than might be expected from natural variations in the giving of the test. Somewhat later, Kuhlman[3] in a study of retests presented evidence that the intelligence quotient had a tendency to decrease. Woodrow[4] attributes a decrease of I. Q. in cases of subnormals but no decrease for normals. In recent articles by Kuhlman[3] and Otis[5] more light has been thrown on the solution of this question, namely, in the case of normal children the I. Q. remains fairly constant, in the case of subnormals the I. Q. decreases with age until the fifteenth or sixteenth year is reached, and in the case of superior children the I. Q. increases. Further, both authors hint at an explanation to the effect that the test used causes this variation of I. Q. As yet, however, no complete mathematical exposition of this phenomenon has appeared. It seems to the writer that the real explanation for the variations in I. Q. lies in the fact that the I. Q. is derived from the division of

[2] Terman, L. M., "The Measurement of Intelligence." Houghton Mifflin Co., Chicago, 1916.

[3] Kuhlman, F., "The results of repeated mental reexaminations of 639 feeble-minded over a period of ten years." *The Journal of Applied Psychology*, Sept., 1921, pp. 195–224.

[4] Woodrow, Herbert, "Brightness and Dullness in Children." J. B. Lippincott Co., Chicago, 1919.

[5] Otis, Arthur S., "Suggested studies in the field of mental testing," *The Journal of Educational Method*, Feb., 1922, pp. 220–232.

the summation of a decreasing variable—the mental age—by uniform units—the chronological age—rather than in any mutations in rate of growth.

Subnormality has been commonly accepted as the result of a slower rate of growth. *On the assumption that changes and variations in human intelligence are gradual, relative and uniform* the writer *is assuming that there is a fairly constant ratio between the rate of growth of subnormals and of normals*, that is, the imbecile with an initial I. Q. of .50 grows at a rate one half as rapid as the normal child and stops growing at about the same age, and that consequently his total mental growth is always less than that of the normal. His first year's mental growth is a fraction of a normal child's first year's mental growth; his second year's mental growth is a fraction of a normal child's second year's mental growth, etc. But, before the subnormal child has a mental age of one year, he must add together his first year's mental growth, his second year's mental growth and so on until the total equals the same amount of mental growth that the normal child gains in one year. Since the mental development of the normal child grows less each succeeding year, the subnormal child is adding a fraction of that lesser annual mental growth back on his previous year's growth in order to have his total mental growth *measured in terms of the normal child's mental years*. Consequently, decreasingly small amounts are added to the sum total of his mental age, and when this resultant mental age is divided by the normal child's standard, *his I. Q. is found to decrease from year to year*. For the superior child the converse is true.

In substance, then: (1) The normal amount of mental growth is a decreasing variable. (2) Accelerated mentality is to be construed as a rate of mental growth which is equal to the normal child's decreasing rate multiplied by some factor greater than one. Thus a child who at two years of age has a mental age of three years has simply developed one and one half times as fast as a normal child. (3) Subnormal mentality is to be construed as a rate of growth which is equal to the normal decreasing rate multiplied by some factor less than one. Thus, a child who at four years of age has a mental age of three years has developed approximately three fourths as fast as a normal child.

If we accept these theories as premises and then remember that in our mental measurement we use scales standardized for normal children, we can readily demonstrate that the decrease in I. Q. shown by Kuhlman and Woodrow, and the increase in I. Q. hinted by Terman are due to the mathematics involved rather than to chance fluctuations from the normal variable rate of growth.

The following data will serve to show that a constant ratio between the rates of mental growth of subnormal, normal and superior children will result in a decreasing I. Q. for subnormals, a constant I. Q. for normals, and an increasing I. Q. for superior children.

If mental growth could be figured in terms of some absolute uniform units this explanation of variations of I. Q. would be more obvious. Therefore, for purpose of explanation, the writer has constructed *hypothetical data which give approximately the same results as do actual cases*. The first year's mental growth of a normal child is arbitrarily taken as 32 hypothetical units,[6] the second as 30, the third as 28, and so on until the 16th year's mental growth equals 2 units. The totals of units, mental ages and I. Q.'s are given in Table I and are worked out for children whose rates of mental growth are .25, .75, .85, 1.25, 1.50 and 1.75 times that of the normal child.

Glancing at Part I of Table I, we have in the first row the annual mental growths in absolute, equal, *hypothetical units* for each of the first sixteen chronological years of a normal child. The second row is the total mental growth at each chronological year and is the total of all the yearly growths preceding. The third row is the mental age at each year, ascertained by taking the total growth at each year and subtracting first the equivalent of mental year 1, then mental year 2, etc., until the total is divided into as many mental years of decreasing size as possible. The equivalents of each mental year naturally are the number of units which the normal child grows in that year. Thus 32 units is the equivalent of mental year 1, 30 units of mental year 2, etc. The I. Q.

[6] This number was taken in order that a uniform annual decrease of two points for sixteen years would bring the annual growth to zero.

	Chronological Age in Years	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
I	Annual growth in units.....	32	30	28	26	24	22	20	18	16	14	12	10	8	6	4	2
Normal	Total units at each year	32	62	90	116	140	162	182	200	216	230	242	252	260	266	270	272
	Mental age at each year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	I. Q. at each year	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
II	Annual growth in units.....	27.2	25.5	23.8	22.1	20.4	18.7	17.0	15.3	13.6	11.9	10.2	8.5	6.8	5.1	3.4	1.7
.85	Total units at each year	27.2	52.7	76.5	98.6	119	137.7	154.7	170.	183.6	195.5	205.7	214.2	221	226.1	229.5	231.2
Backward	Mental age at each year	.85	1.69	2.52	3.33	4.12	4.9	5.67	6.4	7.1	7.75	8.36	8.9	9.36	9.8	10	10.1
	I. Q. at each year	.85	.845	.84	.83	.824	.815	.81	.80	.79	.775	.76	.74	.72	.70	.67	.63
III	Annual growth in units.....	24.	22.5	21	19.5	18	16.5	15	13.5	12	10.5	9	7.5	6	4.5	3	1.5
.75	Total units at each year	24	46.5	67.5	87	105	121.5	136.5	150	162	172.5	181.5	189	195	199.5	202.5	204
Moron	Mental age at each year	.75	1.48	2.19	2.89	3.57	4.23	4.85	5.45	6.00	6.52	6.97	7.39	7.72	7.97	8.16	8.25
	I. Q. at each year	.75	.74	.73	.72	.71	.70	.69	.68	.67	.65	.63	.61	.59	.57	.54	.51
IV	Annual growth in units.....	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
.50	Total units at each year	16	31	45	58	70	81	91	100	108	115	121	126	130	133	135	136
Imbecile	Mental age at each year	.5	.91	1.43	1.86	2.28	2.68	3.04	3.39	3.69	3.96	4.21	4.41	4.58	4.71	4.79	4.83
	I. Q. at each year	.50	.49	.48	.46	.45	.44	.43	.42	.41	.40	.38	.37	.35	.34	.32	.30
V	Annual growth in units.....	8	7.5	7	6.5	6	5.5	5	4.5	4	3.5	3	2.5	2	1.5	1.	.5
.25	Total units at each year	8	15.5	22.5	29	35	40.5	45.5	50	54	57.5	60.5	63	65	66.5	67.5	68
Idiot	Mental age at each year	.25	.48	.70	.91	1.10	1.28	1.45	1.60	1.73	1.85	1.95	2.04	2.11	2.16	2.19	2.21
	I. Q. at each year	.25	.24	.23	.23	.22	.21	.21	.20	.19	.18	.18	.17	.16	.15	.15	.14
VI	Annual growth in units.....	40	37.5	35	32.5	30	27.5	25	22.5	20	17.5	15	12.5	10	7.5	5	2.5
1.25	Total units at each year	40	77.5	112.5	145	175	202.5	227.5	250	270	287.5	302.5	315	325	332.5	337.5	340
Bright	Mental age at each year	1.26	2.55	3.86	5.23	6.65	8.16	9.82	11.80	15.00							
	I. Q. at each year	1.26	1.27	1.29	1.31	1.33	1.36	1.40	1.47	1.66							
VII	Annual growth in units.....	48	45	42	39	36	33	30	27	24	21	18	15	12	9	6	3
1.50	Total units at each year	48	93	135	174	210	243	273	300	324	345	363	378	390	399	405	408
Superior	Mental age at each year	1.53	3.11	4.79	6.60	8.62	11.10	16+									
	I. Q. at each year	1.53	1.55	1.60	1.65	1.72	1.85	2.30+									
VIII	Annual growth in units.....	56	52.5	49	45.5	42	38.5	35	31.5	28	24.5	21	17.5	14	10.5	7	3.5
1.75	Total units at each year	56	108.5	157.5	203	245	283.5	318.5	350	378	402.5	423.5	441	455	465.5	472.5	476
Genius	Mental age at each year	1.80	3.71	5.80	8.19	11.30	16+										
	I. Q. at each year	1.80	1.85	1.93	2.05	2.26	2.66+										

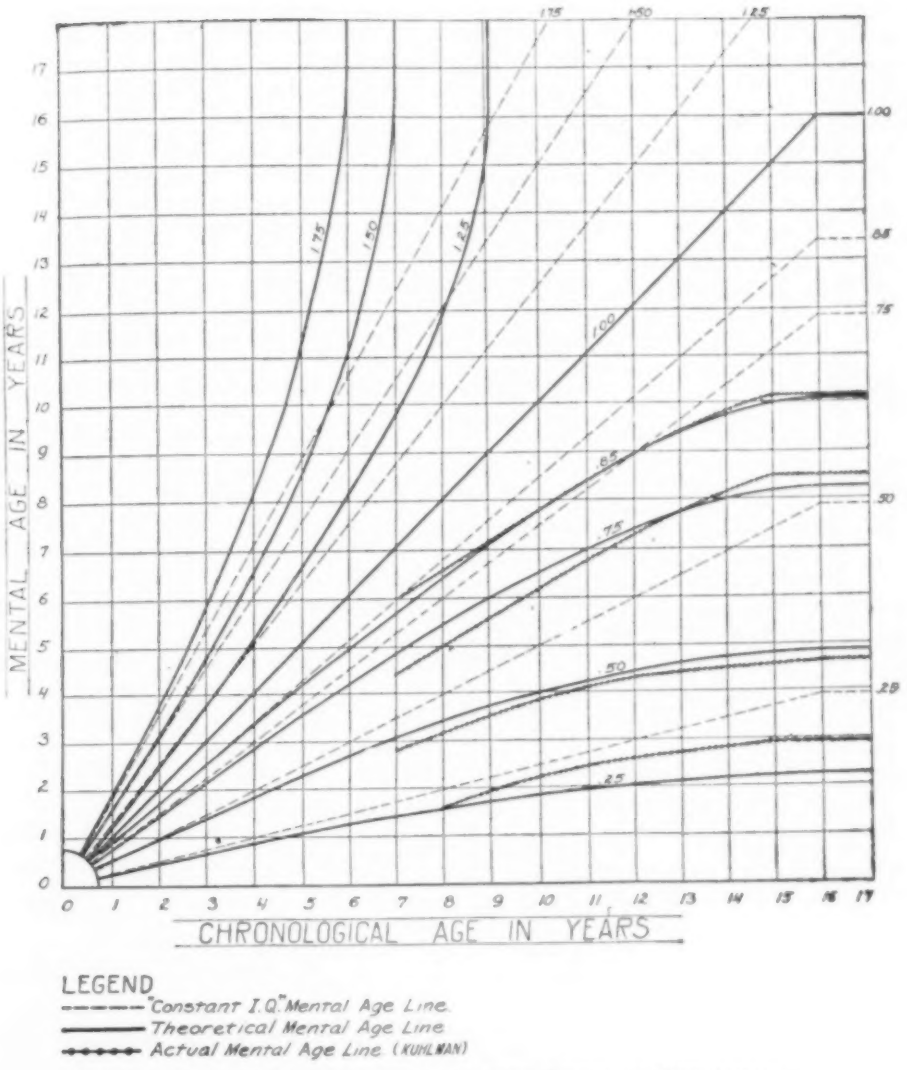

FIG. I. PROGRESS OF MENTAL AGES AT VARIOUS LEVELS OF INTELLIGENCE

row gives the result of dividing the mental age by the chronological age. For the normal child this quotient is of course "1.00" in all years.

Looking at Part III we consider the moron whose rate of growth is three fourths that of the normal child. The first year he has grown three fourths of 32 units or 24 units, his mental age is three fourths years and his I. Q. is .75. The second year he grows three fourths as much as the normal child, that is, three fourths of 30 units or 22½ units. His total growth is 24 plus 22½ units or 46½ units. Forty-six and one half units is one year of normal growth plus 14½ units (32 plus 14½) or 1 plus 14½/30 or 1.48 mental years. Then 1.48/2.00 gives an I. Q. of .74. We see, therefore, the moron's I. Q. decreases .01 by the end of the second year, not because the child does not continue to grow three fourths as fast as the normal child, but because *we measure the three fourths growth by a scale of normal growths.* At the end of the first year the moron lacks 8 units of the normal child's first year's growth.

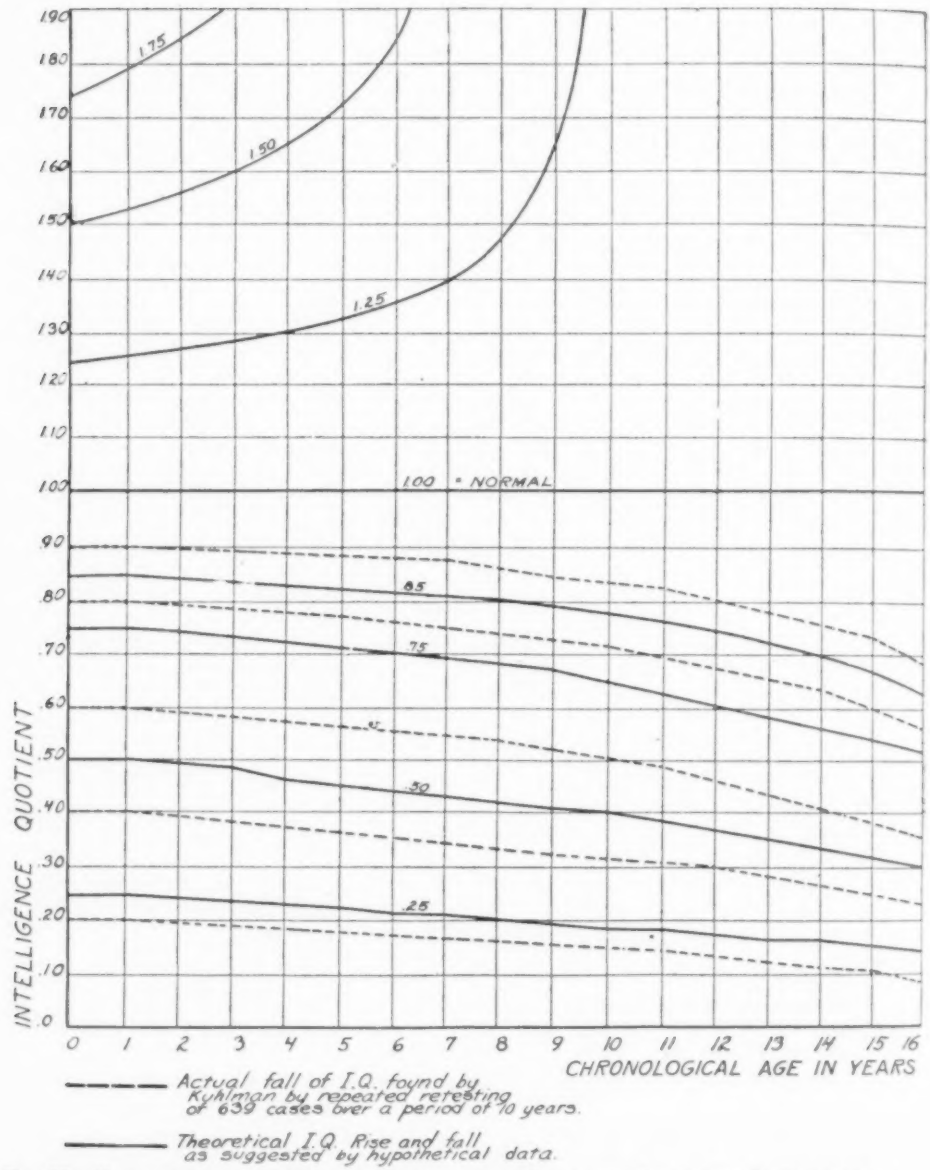

Fig. II. Variations of Intelligence Quotients at Different Levels of Intelligence

The second year he grows less than the first year. Nevertheless, part of the second year's score, the first 8 units, must apply on his first year's growth before he can be said to have a mental age of 1 year. Consequently, his 46½ units of growth do not equal 1.50 (2 times .75) years in mental age, but rather only 1.48 years in mental age.

Part VII illustrates a superior child whose rate of growth is 1½ times that of a normal child. The first year he grows 48 units (1½ times 32 units), his mental age is 1 year plus 16/30 or 1.53 and his I. Q. is 1.53. The second year he grows 1½ times 30 units or 45 units and his total is 93 units. But 93 units is equal to 32 units plus 30 units plus 28 units

plus 3 units. Therefore, three years of a normal child's growth and 3 units is equal to 3 plus 3/26 or 3.11 mental years. Three and eleven hundredths divided by two gives him an I. Q. of 1.55 at the end of his second year. We find his I. Q. increasing, not because the rate of growth has increased but because the 16 units made the first year in excess of the first year's growth equal more than one half the second year's normal growth and the 93 units made by the end of the second year are more than three years of normal growth.

On the basis of the data in Table I, Figure I (Progress of Mental Ages at Various Levels of Intelligence) was constructed so as to show how actual mental ages vary from year to year from the mental ages which would be necessary to keep the I. Q. constant. In each case the heavy curve is the curve of mental ages which the writer's data give for an individual who grows with the fraction of normal rate indicated by the figures *on the curve*. The straight dotted line with the same figures *at the margin* is the line of mental ages which would have given a constant I. Q. of the size indicated at the margin. Thus ".50" at the margin is the line of mental ages which from year to year would give an I. Q. of .50. The heavy curve labeled ".50" is the line of mental ages which the writer's data indicate would be followed by a child who starts out to grow .50 as fast as a normal child. The divergence between the heavy .50 line and the dotted .50 line is the cause of the decreasing I. Q.'s which are the subject of so much discussion.

From these data the I. Q.'s are plotted in Figure II (Intelligence Quotients and Their Variations). It is to be noted that the normal child's I. Q. of 1.00 is a constant—a straight line. I. Q.'s above 1.00 increase and those below 1.00 decrease, a fact noted by several studies previously cited. From these data it is evident that a child having at birth an I. Q. of .75 (assuming it could be measured) would at 16 years have an I. Q. of .51; a child having an I. Q. of .50 at birth would at 16 years have an I. Q. of .30, and so on.

The surprising thing about these hypothetical data is their close adherence to actual data. In Figure I are plotted the data found by Kuhlman by repeated reexaminations of 39 subnormals in the Minnesota School for the Feeble-minded. In Figure II are plotted decreasing I. Q.'s found by Kuhlman in the same study. In Figure II it should be noted that there is a close agreement between Kuhlman's curves and those of the writer. They are parallel. They do not coincide because they start at different levels of brightness. Mathematically speaking, it is scarcely possible for a system of real and hypothetical curves to agree as closely as do those of Kuhlman and of the writer without having some fundamental, mathematical principle underlying both.

The writer's theory is further borne out by the following examples of decreasing I. Q. among children from the state school for the feebleminded,[7] who have had three or more

TABLE II

DECREASE OF INTELLIGENCE QUOTIENT IN TWENTY-FIVE SELECTED CASES

	Chronological Age in Years[8]						*Intelligence Quotients*				
Test Case	1	2	3	4	5	I.Q.	1	2	3	4	5
1.	8	13	16				18	15	12		
2.	12	16	18	21			45	36	33	30	
3.	14	19	23				49	40	37		
4.	11	14	16	20			27	20	14	11	
5.	14	17	20	22			48	44	42	38	
6.	9	11	14	16			43	46	39	32	
7.	10	14	16	19			49	40	38	36	
8.	11	12	14	16			51	51	44	41	
9.	8	10	13	15	17		59	63	48	40	43
10.	10	12	14	16			66	60	51	49	
11.	12	14	17				63	58	46		
12.	9	12	14	16			56	49	43	47	
13.	9	13	15	18			67	54	49	44	
14.	8	10	12				70	60	55		
15.	11	14	16	19			62	48	36	33	
16.	5	8	11				55	46	38		
17.	10	12	14	16			67	52	46	43	
18.	10	12	14				65	54	52		
19.	9	12	14	16			64	62	52	51	
20.	9	13	16				72	63	53		
21.	5	6	9	12			88	86	73	56	
22.	10	15	17	19			76	61	57	56	
23.	9	12	15				78	71	65		
24.	9	10	11	14	16		76	70	68	58	55
25.	9	12	14	16			75	58	54	50	

[7] Obtained from files of State Bureau of Psychological Research, St. Paul, Minnesota, F. Kuhlman, director.

[8] Figured to the nearest year.

retests (Table II). For instance, the first case cited is an idiot who at the chronological age of 8 had an I. Q. of .18, at the chronological age of 13 an I. Q. of .15, and at the age of 15 an I. Q. of .12.

In all instances of retest of children classified as "subnormal" decrease of I. Q. did not occur. That does not necessarily disprove the theory in question. One or more of several reasons might explain this fact, *e.g.*, inaccurate testing at one or more of the examinations, error in computation, serious physical illness or temporary pathological mental condition. The fact remains, however, that the largest percentage of I. Q.'s of subnormals tends to decrease. Further proof that these decreases in I. Q. on the part of subnormals are to be expected appear in Table III, which is a summary of 1,849 cases, also retested at the Minnesota school for feeble-minded at various intervals.

TABLE III

Summary Groups Showing Decrease of Intelligence Quotient in 1,849 Cases

Of 444 idiots

65	I. Q.s	decreased	0 pt.
87	"	"	2 pts.
96	"	"	3 "
97	"	"	4 "
99	"	"	5 "

444—Total

Of 630 morons

35	I. Q.s	decreased	1 pt.
54	"	"	2 pts.
75	"	"	3 "
86	"	"	4 "
92	"	"	5 "
94	"	"	6 "
96	"	"	7 "
98	"	"	8 "

630—Total

Of 340 border-line

16	I. Q.s	decreased	1 pt.
21	"	"	2 pts.
34	"	"	3 "
48	"	"	4 "
62	"	"	5 "
78	"	"	6 "
81	"	"	7 "

340—Total

Of 435 imbeciles

61	I. Q.s	decreased	1 pt.
85	"	"	2 pts.
94	"	"	3 "
97	"	"	4 "
98	"	"	5 "

435—Total

In a recent study Dr. Baldwin[9] gives some data for superior children which tend to verify the statement that I. Q.'s of superior children increase.

The writer has gone to some length to show that the probability is very high that the intelligence quotient of a subnormal child, if accurately taken, will in several years decrease rather than increase and that the opposite would be true for an I. Q. over 1.00.

With reference to the "special classes," of the 2,195 cases of subnormals found in these classes in Minnesota in 1921–1922, 257 cases, or 12 per cent., had I. Q.'s between .50–.59; 1,236 cases, or 56 per cent., had I. Q.'s between .60–.74, and 702 cases, or 32 per cent., had I. Q.'s between .75–.85.

According to the findings of this study it is impossible to hope that these pupils will "catch up" with normal pupils. By the very nature of their defect they are to be expected to be more mentally deficient three or more years hence than they are at the time of their removal to the special class. That being true, it would seem that the prognosis of a pupil committed to the "special class" would be not a brief respite for "catching up" but rather a continuation of his education in the "special class." This would also mean that the special classes should have special curricula, not weak imitations of the regular grade curricula designed to prepare the pupil to go on with his education in the regular grades later, but rather, well-developed "special classes" curricula designed to give him *in the special class* the best education and most useful training of which he is capable.

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University of Washington

[9] Baldwin, B. T., and Stecher, L. I. "Mental growth curve of normal and superior children." Univ. of Iowa Studies in Child Welfare, Vol. II, No. 1, January 1, 1922.